

## **Supplementary Information**

### **Doxorubicin and resveratrol co-delivery nanoparticle to overcome doxorubicin resistance**

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Running title: co-delivery of doxorubicin and resveratrol.

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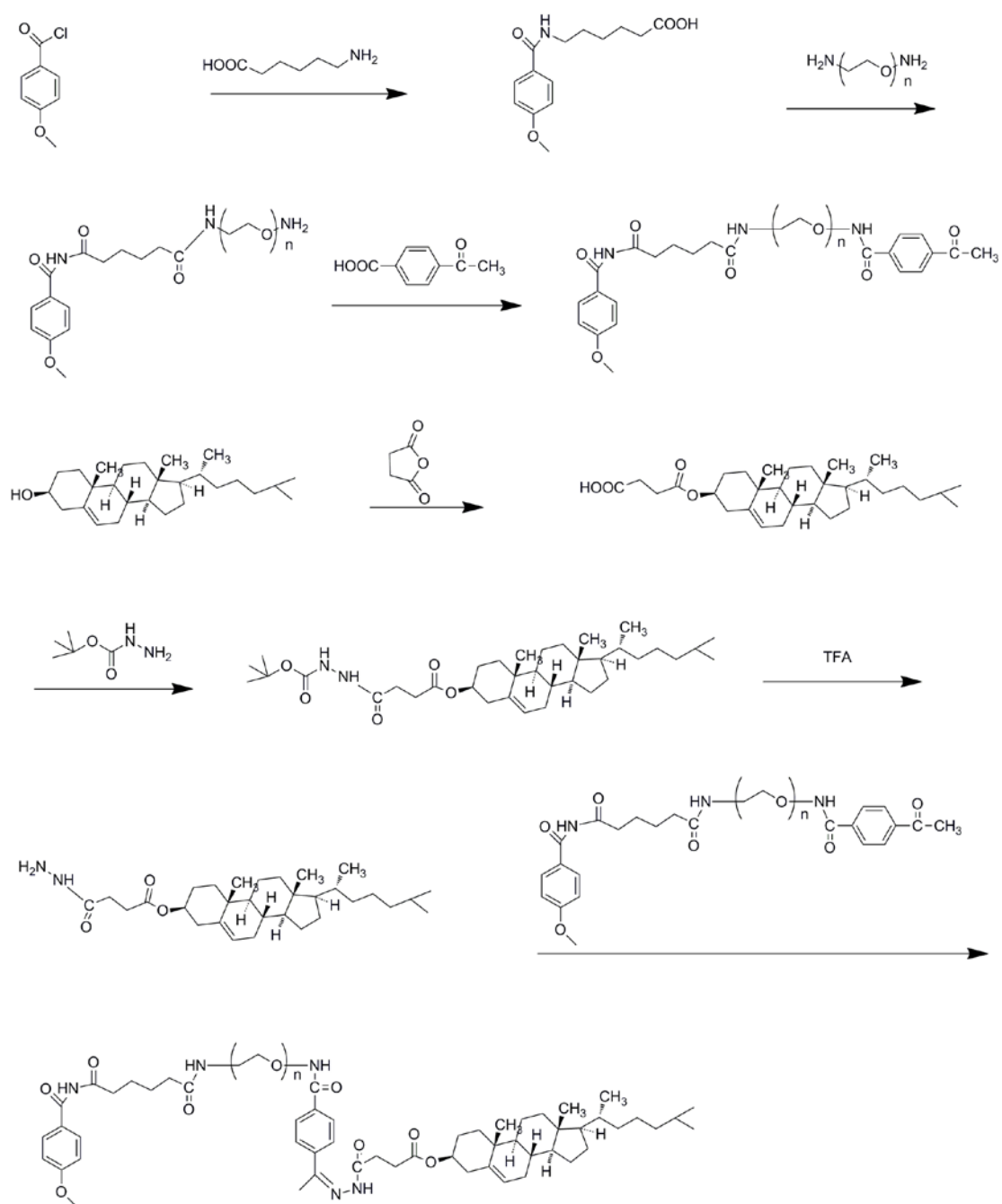
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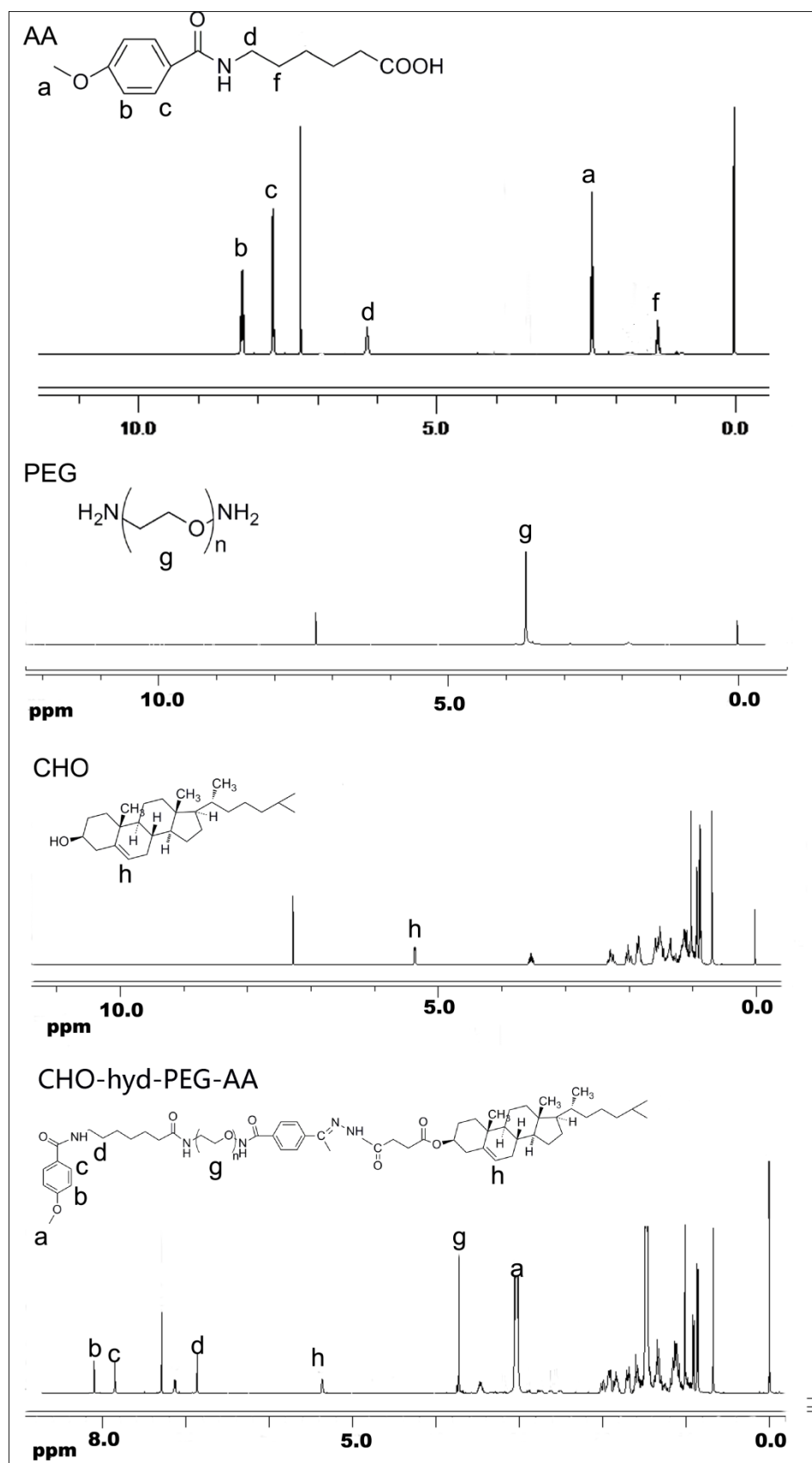
Mail address: Changle West Road 17, Shaanxi province, Xi'an, 710032, China.

Conflicts of Interest/Disclosures: None

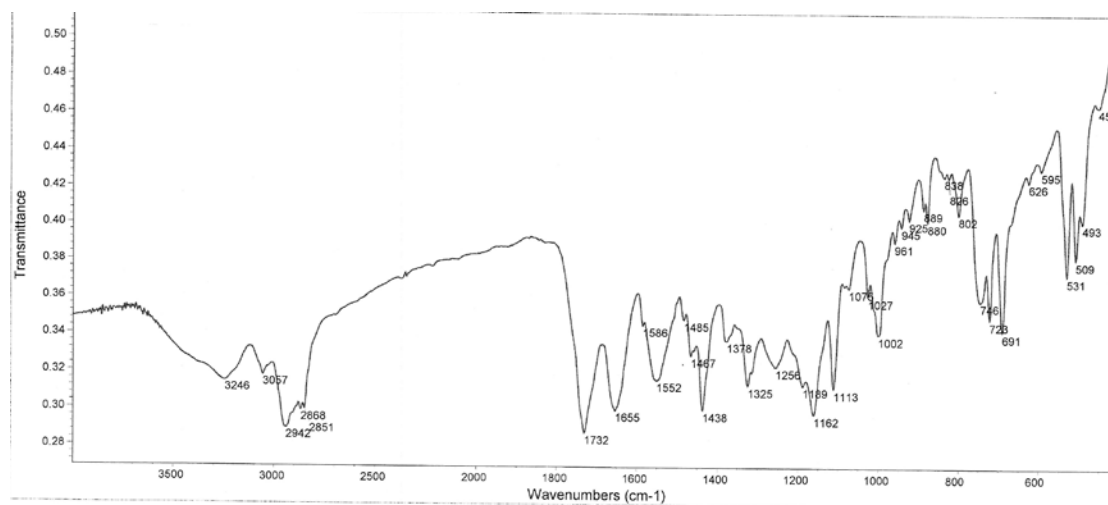
**Supplementary figure 1. Synthetic route of CHO-hyd-PEG-AA.**



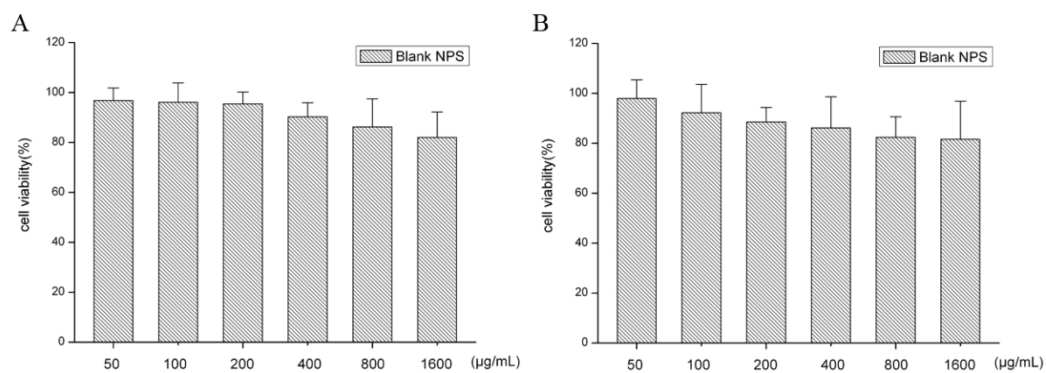
**Supplementary figure 2.** The  $^1\text{H}$  NMR spectrum (dissolved in  $\text{CHCl}_3$ ) of CHO-hyd-PEG-AA.



**Supplementary figure 3.** The FTIR spectrum of CHO-hyd-PEG-AA.



**Supplementary figure 4.** Cytotoxicity of blank nanoparticle on MDA-MB-231/ADR cells (A) and MCF-7/ADR cells (B).



**Supplementary figure 5.** Cell cycle analysis after MCF-7/ADR cells were cultured with free DOX, free RES, MIX and DOX/RES-loaded NPS for 24 h. Panel A is the typical pictures of flow cytometry in MCF-7/ADR cells. Panel B is the statistic results of cell cycle. Panel C is the western blot analysis of cell cycle-related proteins expression. Data are mean±SD, n=3, \*p<0.05, \*\*p<0.01, vs control or PBS.

